

REMARKS

This application has been reviewed in light of the Office Action dated September 10, 2003. Claims 1-4, 6, 7, 9, and 10 are presented for examination. Claim 8 has been canceled, without prejudice or disclaimer of subject matter and will not be discussed further. Claims 1, 3, 6, 7, 9, and 10 have been amended to define more clearly what Applicant regards as his invention. Claims 1, 9, and 10 are in independent form. Favorable reconsideration is requested.

Claim 6 was rejected under 35 U.S.C. § 112, second paragraph, as being indefinite.

Claim 6 has been carefully reviewed and amended as deemed necessary to ensure that it conforms fully to the requirements of Section 112, second paragraph, with special attention to the points raised in paragraph 4 of the Office Action. Specifically, claim 6 has been amended to replace the term "kind of recording material" with --kind of signal--. Support for the recitation of claim 6 can be found at least on page 19, lines 4-7, of the specification and Figure 4.¹ It is believed that the rejection under Section 112, second paragraph, has been obviated, and its withdrawal is therefore respectfully requested.

Claims 1-4, 7, 9, and 10 were rejected under 35 U.S.C. § 103(a) as being obvious over Applicant's admitted prior art, in view of U.S. Patent No. 6,462,838 (*Hirata et al.*) and U.S. Patent No. 4,513,325 (*Itoh*), and claim 6 was rejected under Section 103(a) as being obvious over Applicant's admitted prior art, in view of *Hirata et al.* and *Itoh*, and further in view of U.S. Patent No. 6,473,200 (*Ogata*).

¹It is to be understood, of course, that the claim scope is not limited by the details of the described embodiments, which are referred to only to facilitate explanation.

As shown above, Applicant has amended independent claims 1, 9, and 10 in terms that still more clearly define what he regards as his invention. Applicant submits that these amended independent claims, together with the remaining claims dependent thereon, are patentably distinct from the cited prior art for at least the following reasons.

As discussed previously in the Amendment dated June 19, 2003, the present invention is directed to an image processing method for forming an image output condition of an image output unit on the basis of data read from a reference image output from the image output unit. As described in detail in the specification, the results of an image printed by different printers may be different from one printer to the next. Similarly, the results of an image repeatedly output by the same printer may also vary because of the instability of the output characteristic of the image forming unit and dispersion between connected devices. In conventional systems, it is possible to stabilize the output density characteristic of a printer using a densitometer, which is very expensive. Alternatively, a flatbed scanner, in lieu of a densitometer, can also be used. However, the reading accuracy of a scanner is insufficient, because, if the patch is put at a different place on the original support board of the scanner, the measured density value can vary greatly.

The aspect of the present invention set forth in claim 1 is an image processing method for instructing an image output unit to output onto a recording medium a reference image based on a predetermined patch pattern, and generating an image output condition of the image output unit on the basis of read data of the reference image output by the image output unit. In the patch pattern, plural identical patches are disposed at different positions on the recording medium and at different positions in a main-scan direction and in a sub-scan direction, where the image output condition is generated using

the plural identical patches disposed at different positions on the recording medium in the main-scan direction and in the sub-scan direction.

An important feature of claim 1 is that the image output condition is generated using the plural identical patches disposed at different positions on the recording medium in the main-scan direction and in the sub-scan direction. By virtue of this feature, the image output condition can be generated in consideration of the unevenness in the densities in the main-scan and sub-scan directions.

Applicant submits that a *prima facie* case of obviousness has not been made out as to claim 1. A *prima facie* case of obviousness requires that three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference(s) or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art references when combined must teach or suggest all the claimed limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on the Applicant's own disclosure (M.P.E.P. § 2143).

Hirata et al. relates to forming an image on a multilevel gradation. Column 15, lines 60-67, and Figure 12 of *Hirata et al.* discuss that an automatic image density control (AIDC) pattern 90 of different density is formed in regard to each color. However, *Hirata et al.* does not disclose the order in which the patterns of different densities are arranged in the AIDC pattern 90. Figure 12 shows that an AIDC sensor 37 is provided in regard to each color, whereby it is suggested that the six AIDC patterns 90 respectively corresponding to the AIDC sensors 37 are the identical-color patterns. Applicant submits that the identical color patches are not disposed at different positions in the both the main

scan and sub-scan directions, but merely disposed at different positions in the main-scan direction.

For at least this reason, Applicant submits that claim 1 is clearly patentable over *Hirata et al.*, taken alone.

Itoh relates to an image output device, such as an Optical Fiber Tube printer, or a laser beam printer in which a hard copy is obtained by utilizing digital signals. *Itoh* discusses that picture elements (patterns) are formed in a main-scan direction and a sub-scan direction of the image, and read control is performed by an image reading device 2 when the pattern-formed image is read. Further, the phase of each read-out picture element (pattern) is made coincident with that of the corresponding pattern on the input original, so as to prevent deterioration in the image quality due to a shift in phase between the patterns (column 1, lines 19-25, and column 3, lines 25-31). That is, the patterns used in *Itoh* are used to ensure phase coincidence between the picture element points of an image and the read-out picture elements, and not for automatic image density control as in *Hirata et al.*, or for generating an image output condition as in claim 1. Applicant submits that there is no suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference(s) or to combine reference teachings of *Hirata et al.* and *Itoh* because the patterns used in *Itoh* and those used in *Hirata et al.* are used for two totally distinct purposes. Accordingly, Applicant submits, therefore, that a *prima facie* case of obviousness has not been made out.

Further, nothing has been found in *Hirata et al.*, *Itoh*, or any permissible combination that would teach or suggest the image output condition being generated using the plural identical patches disposed at different positions on the recording medium in the main-scan direction and in the sub-scan direction, as recited in claim 1.

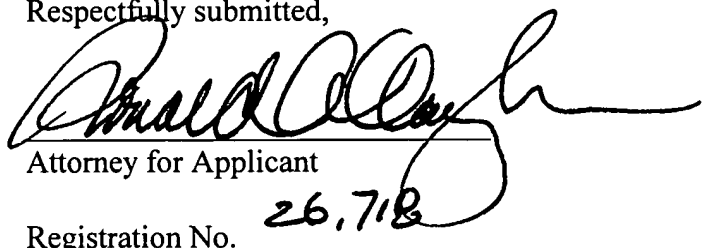
Independent claims 9 and 10 are apparatus and recording medium claims, respectively, corresponding to method claim 1, and are believed to be patentable for at least the same reasons as discussed above in connection with claim 1.

The other claims in this application are each dependent from one or another of the independent claims discussed above and are therefore believed patentable for the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, however, the individual reconsideration of the patentability of each on its own merits is respectfully requested.

In view of the foregoing amendments and remarks, Applicant respectfully requests favorable reconsideration and early passage to issue of the present application.

Applicant's undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,


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